

Plant Disease Management Update Muck Crops

Sally Miller and Melanie Ivey
Ohio State University
Department of Plant Pathology
www.oardc.ohio-state.edu/millerlab

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Lettuce

Aster Yellows is Here! By Sally Miller and Casey Hoy (VegNet, June 20, 2005)

Aster yellows is a serious disease of lettuce, celery, carrots and other vegetable crops in Ohio and many other states. It is transmitted by the aster leafhopper, which migrates into Ohio in late spring. If the immigrant leafhoppers are infected with the phytoplasma that causes the disease, and are present in sufficient numbers, aster yellows can be a problem.

2005 Ohio test results: Leafhoppers were collected from two farms in Celeryville in late May and one farm in Hartville in June and tested using a Polymerase Chain Reaction (PCR) assay. In Celeryville, a small sample from one farm was negative; a larger sample from the other farm had 10.8% aster-yellows-positive leafhoppers. In Hartville, 8% of the leafhoppers sampled were positive for aster yellows.

The numbers of leafhoppers observed and percentage infected are high enough to result in serious aster yellows problems. Leafhopper control in susceptible crops, especially lettuce, over the next few weeks will be crucial in minimizing the epidemic over the remainder of the growing season. The two most important times to control the leafhoppers are approximately 7-14 days after transplanting or emergence and approximately 21-14 days before harvest. The first timing is to protect the current field from infection by incoming adult leafhoppers, and should be a material with long residual activity. The second timing is to prevent any leafhoppers that have developed in the field from moving the disease to other fields, and should be a material that provides thorough and rapid control of nymphs. A distance of at least 60 yards between susceptible fields, and especially moving plantings for the next few weeks as far as possible from current plantings, can also reduce the movement of leafhoppers between fields and reduce the disease.

Lettuce Drop. We finished a fungicide trial at Zellers, managed by Dick Zellers. For the second time, Switch (Syngenta) performed the best, and better than Rovral, Ronilan and a few other products. Syngenta informed me last week that a tolerance has been established for Switch on leafy greens (lettuce group) and a label is expected sometime at the end of 2005.

Parsley. We diagnosed bacterial leaf spot (*Pseudomonas syringae*) in flat leaf parsley in Hartville. If bacterial spot is suspected, cut the parsley when it is dry. Apply copper

bactericide according to the label to protect the new growth.

Radish. The IR-4 Rhizoctonia/clubroot trial on Buurma Farm was harvested on June 29. The Muscador biofumigant treatments had the highest yields and also appear to prevent weeds. More information on these treatments will be coming later.

Peppers. An IR-4 trial to determine the efficacy of various fungicides against Phytophthora blight in peppers has been established on the Wiers farm. This includes 10 treatments either required or suggested by IR-4. This is one of about eight trials on Phytophthora management in peppers and cucurbits in the U.S. this year funded by IR-4.

Cucurbits.

Research

1. We have set up a squash powdery mildew fungicide efficacy trial on the Muck Crops Station. Treatments will be started in a few weeks.
2. We have a demonstration trial of the varieties of cucumbers we are evaluating for resistance to angular leaf spot (ALS) at the station. You are welcome to look at these varieties at any time, and they should be in good shape for the Field Day. These same varieties were inoculated with ALS bacteria last week in Wooster for and will be evaluated for resistance.

Vine Crop Fungicide Programs (Submitted to VegNet June 29, 2005)

In a dry year such as this (so far), diseases can be expected to be less evident than in rainy years. Therefore, it may not be necessary to start fungicide applications until later in the season than in the last several years. A good scouting program, combined with attention to the weather forecasts, is important to determine when to start applying fungicides. A fungicide program for vine crops might start with broad-spectrum protectants such as Bravo, mancozeb or maneb to control diseases such as **anthracnose, alternaria leaf spot and gummy stem blight**. A copper-containing product such as Kocide 2000 should be included to reduce populations of **angular leaf spot** bacteria and will also help with the fungal diseases. Once **powdery mildew** shows up, a good powdery mildew product should be included such as Amistar, Procure or others. If **downy mildew** comes in, probably not before mid-late August, then the weekly program should include a fungicide such as Tanos/Manzate, Previcur Flex + Bravo, or Gavel + Bravo alternated with Ridomil Gold Bravo or other fungicide with a different mode of action (different Fungicide Group). Continue adding copper for angular leaf spot management. See pages 56-57 in the 2005 Ohio Vegetable Production Guide (OSU Extension Bulletin 672) for information on fungicide resistance management and a listing of vegetable fungicides and the Fungicide Group to which they belong.

The second case of **downy mildew on cucumber** in New Jersey was reported on June 24, 2005 in organic slicing and pickling cucumbers, about 1 mile from the first outbreak discovered 10 days previously (update provided by Andy Wyenandt, Rutgers Univ.). According to the North Carolina State University Cucurbit Downy Mildew Forecast (<http://www.ces.ncsu.edu/depts/pp/cucurbit/>), "Tuesday and Wednesday's trajectories do not threaten any locations outside Florida, Georgia, and New Jersey." So it is not time to

worry about downy mildew in Ohio yet. **Powdery mildew** has not been spotted on cucurbits in Ohio at this time, but may be expected in mid-July. Fungicide programs for powdery mildew management do not need to be started until the first spots are observed.

If it looks like there is going to be sustained rainy weather, especially if there are going to be thunderstorms with significant rainfall, and the cucumber, squash, or other vine crop field has a history of **Phytophthora blight**, fungicides for Phytophthora management need to be included (this needs to be done preventatively). Acrobat, Gavel or Tanos, tank-mixed with the full rate of Kocide 2000 or other copper hydroxide fungicide can be used. These have to be alternated with each other or a protectant fungicide; the Tanos label also requires that Manzate or similar product is included. It is important to protect cucumber fruit while they are forming, so that is the best time to use the fungicides like Acrobat, Gavel or Tanos. However, the Pre-Harvest Interval for Gavel (5 days) and Tanos (3 days) can be a problem.

Fungicides should only be considered as a last resort in vine crop disease management. Crop rotation, clean seed, resistant varieties, water management and other cultural practices should be initiated to prevent the buildup of pathogens and reduce the chances for serious disease problems.

Mustard Greens. Trials to 1) evaluate fungicides for downy mildew management; 2) evaluate varieties for resistance to clubroot; and 3) test fungicides for clubroot management (IR-4 and others) have been established.